User Manual

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Minimax / Unimax

Machine nr.: ……

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Preface

This user manual is written for anyone working on or with the machine. Before working on or with the machine, first read this manual.

This user manual contains important instructions / information on how to use the machine in a safe, professional and economical way and must always be available where the machine is used.

In addition to this user manual, the mandatory rules and regulations for accident prevention and environmental protection in the country and place of use of the machine must also be observed.

This user manual contains information on the operation of the machine with all the possible options. Use only the information that applies to your machine. Depending on the intensity of use and customer requirements, this machine can be equipped with various options. Contact your sales consultant.

Supplier details if not directly supplied by Javo BV. Dealer stamp:

Javo BV is not responsible for any errors in this manual or the consequences thereof.

Javo BV is not liable for damage or consequential damage caused by operating errors, lack of expert maintenance and any use other than described in this manual.

The liability of Javo BV also expires once modifications or additions are made without written permission of Javo BV.

This machine is suitable for process and environmental conditions as stated in section "Specifications and Tolerances" of this manual. Any other use is not authorized by Javo BV and this allows the operator and / or its environment at risk.

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1 Technical specifications and tolerances

This machine is intended to be used for filling pots automatically with substrate only. This machine is meant for processing pots, substrate and other materials that are described in this manual only. Detailed operation of the machine is described in section "Operation".

This machine may be used only within the limits for specifications and tolerances of the order, on the assembly drawing and indicated in this manual. If the machine is used outside these specifications, Javo BV cannot take responsibility for this machine.

This machine is intended for products as agreed in the order confirmation only. To ensure the proper operation of this machine, only products with specifications and tolerances as specified in the order may be used.

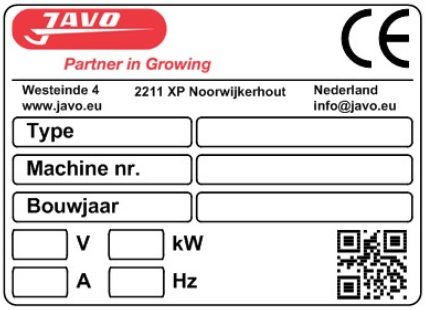
Do not use the machine for purposes other than the intended purpose of Javo BV. This can lead to damage and danger to the operator and its environment.

This machine is CE marked. When placing multiple machines in one line, the entire line must be properly CE marked before using this machine. Untill proper CE Marking of the line is carried out, commissioning of this machine is prohibited.

Specifications	
Voltage	400Volt 50Hz 3~+N+ PE / 220V 60Hz
Machine connection	16A 5pole
Power consumption	1,1 kW
Weight	Minimax: ±550 kg Unimax: ±750 kg
Length x width x height	Minimax: 2980 x 1103 x 1938 mm Unimax: 3260 x 1300 x 1990 mm
Swivel plate	Minimax: 1x adjustable 500mm up to 1000mm height Unimax: 2x adjustable 500mm up to 1000mm height
Machine operation	Footswitch / knee switch, continuous switch (only for Unimax), emergency stop button
Number of potholders	Minimax 1 Unimax 2
Content substrate bin	Minimax ±700 Litre Unimax ±1500 Litre
Year of construction	See type plate
Type product	As agreed in the order confirmation.

1.1 Type plate

The type plate is placed onto the main cabinet door.



2 Safety

This machine is built according the state of the art technique and the accredited safety regulations. Despite this, the body and life from the user or third parties can be in danger when using it. There could also arise damage to the machine or other goods when using it.

This machine is CE marked. When placing multiple machines in one line, the entire line must be properly CE marked before using this machine. Untill proper CE Marking of the line is carried out, commissioning of this machine is prohibited.

2.1 Provisions

1. Operation and maintenance of this machine must be performed by qualified personnel in compliance with warnings on the machine and in accordance with the user manual. Keep children and other (unauthorized) persons away while using machine.
2. This machine is suitable for process and environmental conditions as stated in section "Specifications and Tolerances" of this manual only. Any other use is not authorized by Javo BV and this allows the operator and / or the environment at risk.
3. It is prohibited to modify this machine, without prior written approval of Javo BV.
4. Thermal fuses and torque limiters may not be set different upon delivery of the new machine. The thermal circuit breakers should never be used to turn on / off the machine.
5. This machine should be installed so that there is sufficient space remaining for providing safe instructions and / or performing maintenance and / or inspections. Put the brakes on the castors before the machine is turned on.
6. Keep the work area clean and well lit. Cluttered or dark areas invite accidents.
7. This machine is not suitable to be used outside. Electrical components are only splashproof. Keep the machine away from rain and moisture. When using the machine in a humid environment is unavoidable, you should use an RCD.
8. Keep hands, hair, loose clothing and / or jewelry away from moving parts of the machine. Wear appropriate clothing without loose parts. Wear non-slip work shoes.
9. As long as the machine is on, no connection or safety devices may be removed. The machine may only be used when all protective devices and safety-related facilities are available and ready for use.
10. Do not stand on the machine when it is operating.
11. Never move the machine if the power cable and / or pneumatic supply is still connected.
12. Prescribed checks and maintenance in the user manual must be observed.
13. Allow the machine to be serviced and repaired by qualified personell only with original replacement parts.
14. In addition to the user manual, generally applicable statutory and other regulations regarding accident prevention and environmental protection have to be respected. This is also referred to handling of personal protective equipment.
15. Inform operating personnel before start maintenance. Interrupt if possible the power (mains), before start machine investigation or maintenance by turning off the main switch and locking the main switch. Pull the plug from the wall socket.
    a. As work must be done with power supply (mains) voltage on the machine, then arrange an additional person who can operate the emergency stop.
16. When a machine part is damaged or not working in the prescribed manner, the work must be interrupted immediately. Resumption allowed only when the machine part is repaired or replaced and checked. Consult your dealer if the machine is not functioning properly.
17. Machine and / or parts must be disposed in accordance with local laws and regulations.

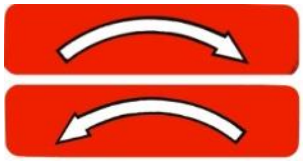
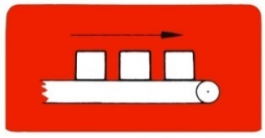
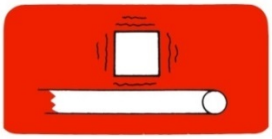
2.2 Safety devices on the machine

Caps and doors are screening moving parts. Always place back caps and close doors before the machine is turned on. Caps and doors should remain closed while operating the machine.

The motors of the machine are protected against overload by thermal switches. These switches are located in the control box.

2.3 Explanation of icons and symbols

Pictogram	Meaning
	Read and understand this manual before using the machine and / or performing maintenance.
	Remove Power (mains).
	Wear during all work on or with the machine safety shoes and safety glasses.
	Wear during cleaning and maintenance work on this machine also safety gloves and protective clothing.
	Warning. Important points and / or instructions regarding safety and / or injury prevention are marked with this warning sign.
	Dangerous electrical voltage. Dangerous electrical voltage present.
	Risk of crushing. Danger of moving or rotating parts.
	It is forbidden to wear Loose clothing, long hair and / or jewelry nearby moving parts of the machine.
	Trespassing.
	Do not rinse control cabinet Danger of moisture in the cabinet when it is rinsed with water.

Symbols that may be present on this machine			
Drill	Direction of movement 	Speed ground feeder (curved)	Speed ground feeder (straight)
Speed pot belt (curved)	Speed pot belt (straight)	Brush disc Rotofill	Tray belt Rotofill 
Rotor Rotofill 			

3 Description of the machine

3.1 Machine overview Minimax

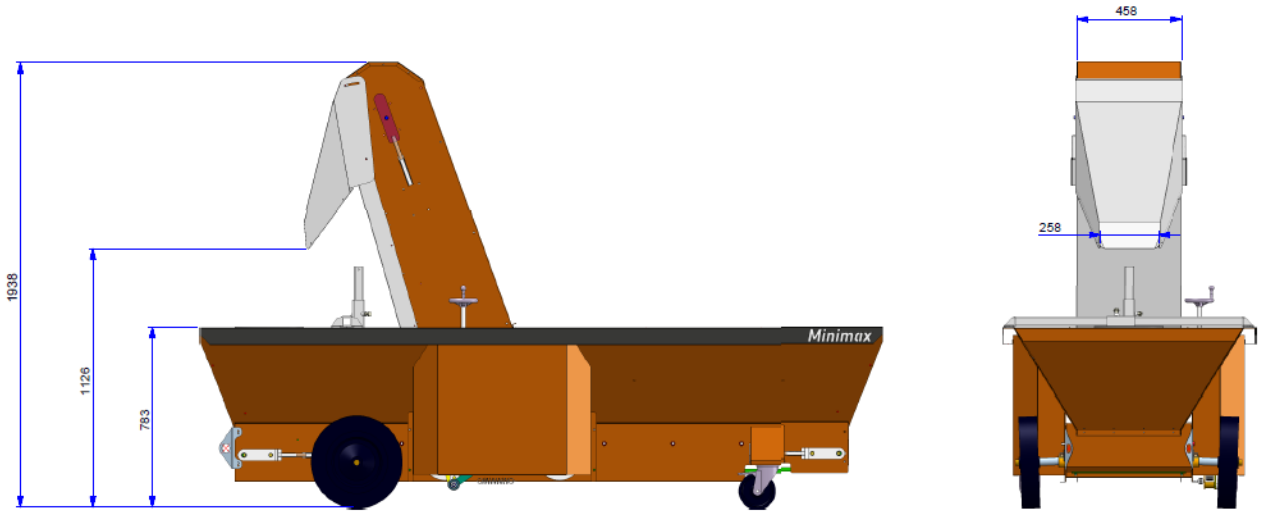
A. Substrate bin
B. Elevator
C. Discharge opening
D. Swivel plate
E. Substrate belt
F. Substrate retour belt
G. Human interface
H. Substrate button

3.2 Machine overview Unimax

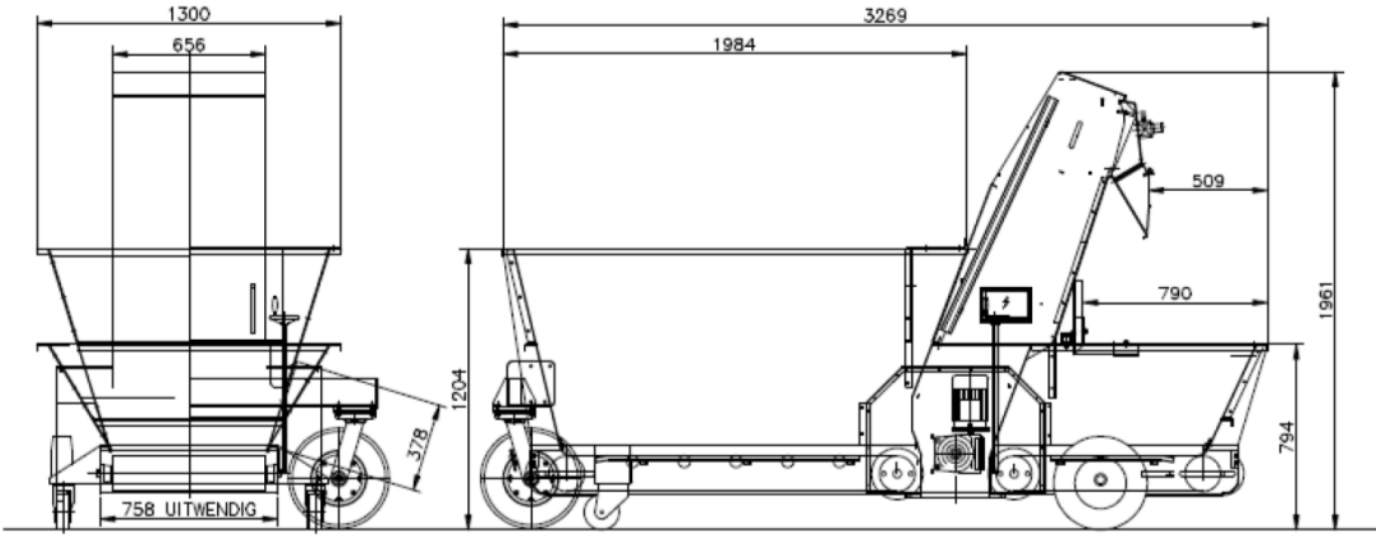
A. Substrate bin
B. Elevator
C. Discharge opening
D. Swivel plates
E. Substrate belt
F. Substrate retour belt
G. Human interface
H. Substrate footswitch

3.3 Outline drawing with main dimensions

Minimax:



Unimax:



3.4 Options

Depending on the intensity of use and customer requirements, this machine can be equipped with various options. Contact your sales consultant.

Options	Code	Specifications
4 meter 5x1.5 cable incl. 16A plug	900965	
Continuous socket	900966	Nonstandard
Substrate bin increase Unimax	UNIMG	1200 Litre extra
Substrate bin increase Minimax 1445x1832x338	JECO-GB-OPZ	Max content 1m3 weight 600kg
** Continuously operating elevator Minimax		Switch on control box on the funnel.
Heavy pneumatic tires Unimax	SU1 L	
Pneumatic tires set incl. Swivelling front wheels and triangle	JECO-WS-LB	4 tires
Electric speed control on elevator Unimax	SU1E	Min. Speed min 25% max. speed plus 20%
adjustable bag holder Unimax	PMBVZ	
Swivel base plate Unimax	PMBDO	
Vibration Unit complete Unimax	UNITR	Equipped with inverter.
* Expansion set for tipper Unimax	206-400	Excl. labor

*Javo Box turner: it cannot be set at all positions behind the Unimax. A conversion kit is available.
** If there is no substrate is decreased, the retour bin will fill up as the retour belt is calculated at a sufficient decrease of substrate.

3.5 Operation

The Javo Minimax / Unimax is intended to be used for filling pots automatically with substrate only.

The process of the machine starts with the substrate bin, which is filled with substrate. By using the substrate conveyor belt and retour belt, the substrate is transferred to the elevator.

The elevator takes over the soil and transfers it onto pots, which have been placed on the swivel plate(s). The swivel plate(s) are adjustable in height and width so that it is applicable to different pot sizes.

The machine is equipped with wheels, which makes the machine easy to move.

3.6 Machine workstations

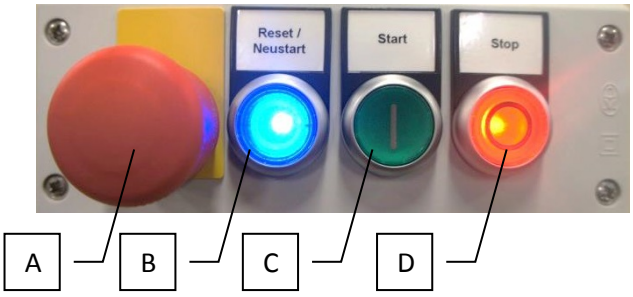
This machine has operator places at the swivel plate(s).

3.7 Controls

Minimax:

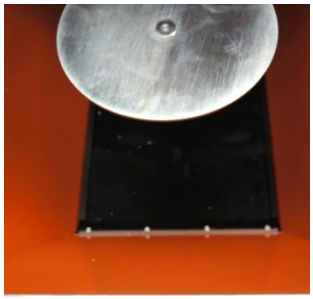
The motor is controlled with the control panel. The control panel consists of the following buttons;

A. Emergency stop button
B. Reset button
C. Start button
D. Stop button



At the electrical cabinet of the machine, these buttons and connectors are placed:

Main switch

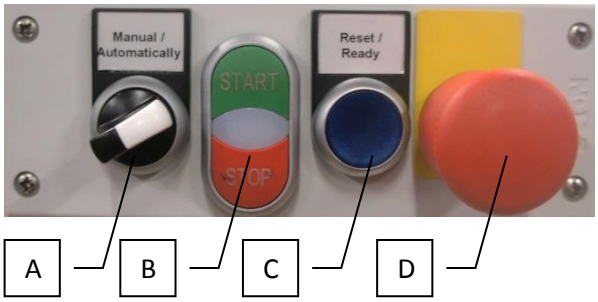


The machine is discharging substrate as the knee pedal is pressed.

Unimax:

The motor is controlled with the control panel. The control panel consists of the following buttons;

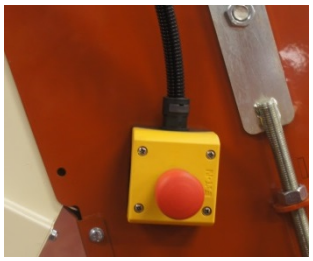
A. Manual / Automatic substrate discharge button
B. Start button / Stop button
C. Reset button
D. Emergency stop button



At the electrical cabinet of the machine, these buttons and connectors are placed:

A. Main switch

The machine is equipped with 2 emergency stop buttons (on the control box and at the right hand side of the elevator).



The machine can supply substrate continuous or only when the foot pedal is pressed.

4 Transport

Follow all instructions described in this manual, in particular chapter safety.

On delivery of the machine, a Javo mechanical engineer must be present to unload the machine from the (freight) wagon.

Prior to moving the machine, the power should be disconnected. Make sure the cables are stowed sufficiently.

When moving within the company (when the machine does not need to be lifted) the state of the machine should be checked. Make sure the path to be traveled is free, so the machine can be moved to the desired position without obstacles.

If the machine is to be lifted for movement (outside the company), please contact your dealer or contact a professional shipping company.

The machine must be transported upright.

The relative humidity should not be too high so that water condenses in the machine.

Report damage during or immediately after delivery to the transport company and to Javo BV. Take all necessary steps to prevent further damage.

5 Mounting, installation and commissioning

Follow all instructions described in this manual, in particular chapter safety.

This machine is CE marked. When placing multiple machines in one line, the entire line must be properly CE marked before using this machine. Up to CE Marking of the line, commissioning of this machine is prohibited.

5.1 Placement

The machine must be placed on a flat surface, with sufficient weight capacity. Install the machine so that there is enough space left for service providing, safe instructions and / or cleaning, maintenance and / or inspections. Put the brakes on the castors before the machine is turned on.

This machine is not suitable to be used in the open air. Electrical components are only splashproof. Keep the machine away from rain and moisture. When using the machine in a humid location is unavoidable, you should use an RCD.

5.2 Facilities to take care of by the user

Prior to delivery of the machine, the required materials and facilities (air, power, substrate, etc.) needs to be present within 3 meters of machine.

Required power supply: 400 Volt, 3 Phase + Neutral + Earth. (N. America: 208/220V 60Hz.).

5.3 Mounting / Connecting

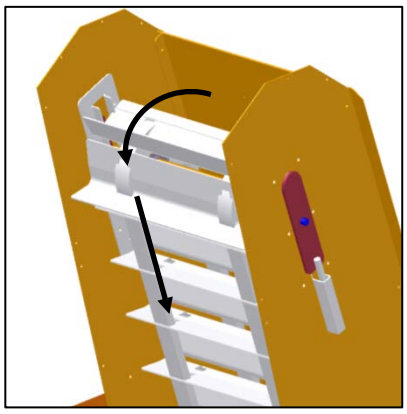
If applicable, the components supplied are to be mounted on the machine. Make sure that the moving parts are free. If the machine is complete, it can be connected (by a competent person) to the power supply.

Keep hands, hair, loose clothing and / or jewellery away from moving parts of the machine. Wear appropriate clothing without loose parts. Wear non-slip work shoes.

As long as the machine is on, no connection or safety devices may be removed. The machine may only be used when all protective devices and safety-related facilities are available and ready for use.

5.4 Check elevator rotation direction

Check the rotation direction of the elevator before you start working with the machine.

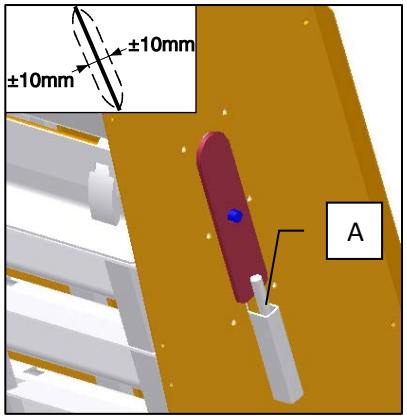


Procedure:

1. Connect the power cable.
2. Start the elevator.
    a. Turn on the main switch.
    b. Press the reset button emergency stop circuit.
    c. Start the elevator with the elevator button.
3. Check the direction of rotation of the elevator.
    a. The desired direction of rotation shown in the picture.
4. Stop the elevator by turning the main switch off.
5. When rotation direction is incorrect:
    a. Remove the plug from the socket.
    b. Open the plug and switch 2 of the 3 phases in the plug. This should only be carried out by suitably qualified personnel.

5.5 Check elevator chain tension

Check the elevator chain tension before you start working with the machine.



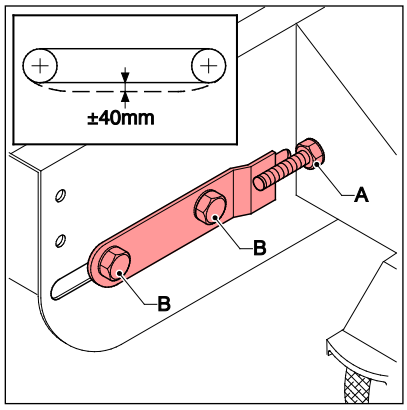
Procedure:

1. Check the elevator chain tension. The correct tension is obtained when the chain in the middle deflects ± 10mm.
2. Adjust the chain tension if necessary .
    a. The tension can be adjusted using the two clamping nuts, located on opposite sides of the elevator housing.
    b. Tighten the nuts (A) on both sides of the elevator equally.

The tension of the chain should not be too tight.

5.6 Check substrate conveyor tension

Check the substrate conveyor belt tension before you start working with the machine.

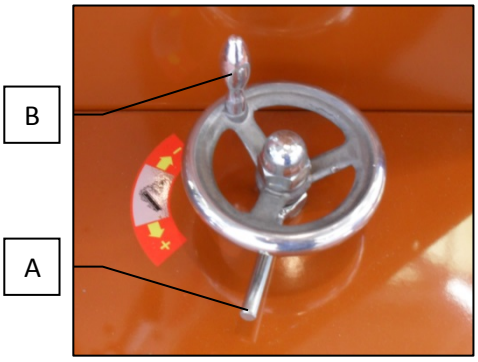


Procedure:

1. Check the substrate conveyor belt tension. The correct tension is obtained when the belt in the middle deflects ± 40mm.
2. Adjust the belt tension if necessary .
    a. Loosen the four screws (B) to the block bearings.
    b. The tension can be adjusted by simultaneously turning both sides of the ground belt (A).
    c. Tighten the four screws (B) to the block bearings.

5.7 Set substrate conveyor speed

Set the substrate conveyor speed before you start working with the machine.



Procedure:

1. Check the substrate conveyor speed. Set the speed in this way that trays are being filled sufficiently before they reach the substrate slide.

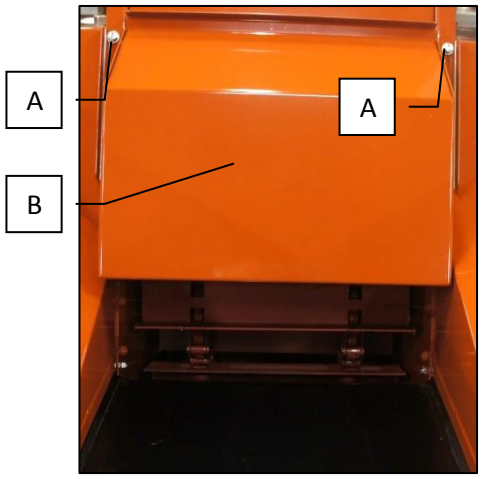
Adjust the speed of the conveyor belt as slowly as possible. Do not add more soil than necessary.

Adjust the speed of the conveyor belt only when engines are running.

2. When the speed needs to be adjusted:
    a. Loosen locking bar (A).
    b. Turn wheel (B):
        i. CCW = substrate conveyor speed is increased.
        ii. Clockwise = the speed of the conveyor will run slower.
    c. Tighten locking bar (A).

5.8 Set substrate slide height

Set the height before you start working with the machine.

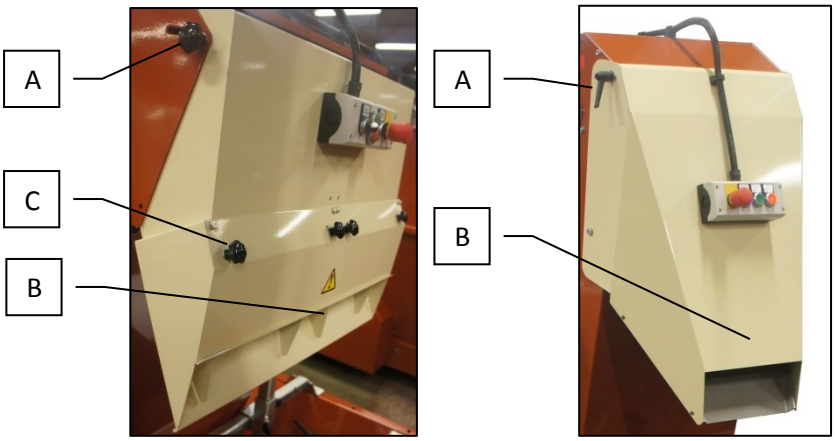


Procedure:

1. Loosen bolts (A), just one stroke.
2. Move the substrate slide (B) into the desired height.
3. Tighten bolts (A).

5.9 Set substrate discharge

Set the substrate discharge before you start working with the machine.

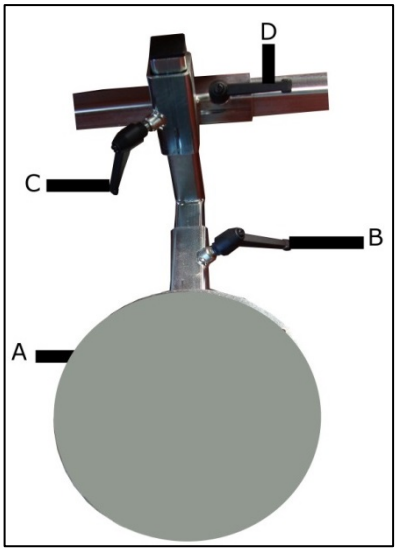


Procedure:

1. Loosen clamp (A), just one stroke.
2. Move the substrate discharge (B) to the desired angle.
3. Tighten clamp (A).
4. At the Unimax, 4 knobs (C) are placed to make the discharge narrow or wider.

5.10 Set swivel plate(s)

Set the swivel plate(s)to the desired spot before you start working with the machine.



Procedure:

1. Loosen clamp (B), just one stroke to move swivel plate (A) forwards or backwards.
2. Loosen clamp (C), just one stroke to move swivel plate (A) up or down.
3. Loosen clamp (D), just one stroke to move swivel plate (A) left or right.
4. Tighten all clamps.

6 Operation

Follow all instructions described in this manual, in particular chapter safety.

Keep hands, hair, loose clothing and / or jewelry away from moving parts of the machine. Wear appropriate clothing without loose parts. Wear non-slip work shoes.

As long as the machine is on, no connection or safety devices may be removed. The machine may only be used when all protective devices and safety-related facilities are available and ready for use.

If a machine part is damaged or not working in the prescribed manner, work must be interrupted immediately. Resumption allowed only when the machine part is repaired or replaced and checked. Consult your dealer if the machine is not functioning properly.

6.1 Start

Start procedure:

1. Turn on the main power at the electrical cabinet.
2. Press the blue reset button.
3. Press the green button on the control panel to start the machine.

6.2 Stop

Stop procedure:

1. Press the red stop button on the control panel.

6.3 Emergency stop

Emergency stop procedure:

1. Press the red emergency stop button on the machine to activate the emergency stop.

Restart after emergency stop procedure:

1. Ensure that the cause of the emergency is resolved.
2. Close all doors and covers.
3. Pull the red emergency stop button to reset.
4. Press the reset button.
5. Press the green button on the control panel to start the machine.

7 Maintenance

Follow all instructions described in this manual, in particular chapter safety.

Maintenance of this machine must be performed in compliance with warnings on the machine and in accordance with the user manual by qualified personnel.

Keep hands, hair, loose clothing and / or jewelry away from moving parts of the machine. Wear appropriate clothing without loose parts. Wear non-slip work shoes.

As long as the machine is on, no connection or safety devices may be removed. The machine may only be used when all protective devices and safety-related facilities are available and ready for use.

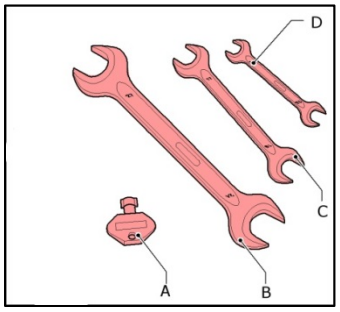
Always unplug the plug from the socket before starting maintenance. Wear personal protective equipment (see section 2.3).

Inform operating personnel before start maintenance. Interrupt if possible the power (mains), before the machine is investigated or maintained by turning off the main switch and locking it and pull the plug from the socket. If work must be done with power supply (mains) voltage on the machine, work with an additional person who can operate the emergency stop.

7.1 Required tools and equipment

A set of keys is included with the machine, consisting of:

A. Door key
B. Spanner 24-27mm
C. Spanner 17-19mm
D. Spanner 10-13mm



7.2 Preventive Maintenance

For the following maintenance instructions normal use is considered. With heavy use, or use under extreme conditions, maintenance should be performed at shorter intervals.

Item	1x per...	Comments
Machine	Day	Check if moving parts are functioning correctly and not clamping and / or parts are broken or damaged in such a way that the operation is adversely affected. Have damaged parts repaired before use.
Chains	Day	Check tension. See section “Mounting, installation and commisioning”.
Materials in the machine	Day	Remove trays or other material that has fallen into the machine before starting the machine.
Elevator	Month	Cleaning. See section “Elevator cleaning”.
Safety components	Week	Test the safety circuit. See section “Test safety circuit”.
Pictograms	Week	Check readability and replace if necessary.
Electrical installation	Year	Check for damage.
Electric motors	Year	Remove dust.

7.3 Elevator cleaning

Procedure:

1. Turn off the machine and remove plug from socket.
2. Remove protective cover A.
3. Clean the blades with compressed air or a dry brush.
4. Install the protective cover on the machine.

7.4 Test safety circuit

Procedure:

1. Start the machine.
2. Press the emergency stop button. The machine is now disabled.
3. Pull the Emergency Stop button. The machine remains off.
4. Press the reset button emergency stop circuit. All possibly connected conveyors start moving.
5. Start the machine

The machine must not be used when going through the above process, the machine responds differently than described above. Warn directly Javo BV.

7.5 Fault list

Problem	Possible cause	Action / Solution
Motor fault	mains voltage deviates more than 10% of the rated motor voltage	Provide the correct voltage
	Too high cooling air temperature	Provide cool air
	Poor cable connection	check the cable connection and repair if necessary
	Blown fuse	Replace fuse
	Too little cooling air caused by a clogged cooling air passage	Ensure proper inlet and outlet of the cooling air
The motor hums and takes too much power	Defect winding	Repair or replace the motor winding
Thermal fuses are falling out	Motor defect	Call a mechanic
	Mechanical blockage of elevator	Remove blockages
	Motor is connected incorrectly	Connect the motor correct
Soil conveyor is not moving	The motor or mechanical drive is not functioning	Check motor and drive mechanism
	Conveyor tension is too low (belt slipping)	Increase conveyor belt tension
The elevator chain does not move	Obstacles in chain	Remove obstacles
	Ground freezes in elevator	Remove excess soil from elevator paddles

Problem	Possible cause	Action / Solution
Machine does not start	Emergency stop button is not pulled	Pull Emergency Stop button and reset the safety circuit by pressing the reset button
	Emergency stop button not reset	Reset the safety circuit by pressing the reset button
	Breaker tripped in main cabinet	See why circuit breaker has tripped. Remove obstacles to conveyors. Switch on the machine after solving the problem.
	Cable length too large causing voltage loss	Reduce cable length
	Voltage fluctuations caused by other devices on the same group	Ensure the correct voltage. Turn off other devices
Amount of soil provided is not enough	Soilslide is set too low.	Set the soil slide higher.
	Soilslide is set too low and a tunnel is build up above the soil conveyor.	Set the soil slide higher.
	belt slipping	Check conveyor tension

7.6 Drawings and schemes

The drawings accompanying this machine are supplied in a separate file. The wiring diagrams are included in the electrical cabinet of the machine.

7.7 Spare parts

Only original spare parts and accessories of Javo BV may be used on the machine.

Javo BV advises you to take certain parts in stock because of wear sensitivity and / or any expected downtime for re-ordering of the parts.

The spare parts list can be found on the assembly drawings. These can be found on JavoNet.

When ordering (spare) parts at Javo BV, the following information must be included: drawing number, item number, desired length (if applicable) and the desired number of pieces.

7.8 JavoNet

We recommend you to register your machine on JavoNet. This way you get online access to all technical drawings and documents pertaining to your machine.
Visit our website (www.javo.eu) for more information and to request an account.

JavoNet

7.9 Customer support and advice

Our technical department will answer your other questions about repair and maintenance of your machine and spare parts. We can help you with any questions regarding the purchase, use and settings of products and accessories.

8 Disposal of machine or machine parts

Follow all instructions described in this manual, in particular chapter safety.

Perform the following steps when disposing the machine:

1. Decommission the machine and remove electric and pneumatic power.
2. Drain and remove all consumables.
3. Scrap the machine according to the local legislation.

9 EG-conformity statement

EG-conformity statement for machines (directive 2006/42/EG, annex II, under A.)

CE

Javo BV
Westeinde 4
2211XP Noordwijkerhout
The Netherlands

Declares that:

Machine: ***Minimax / Unimax***
Type: ***Potmachine***

is in accordance with the **Machine directive 2006/42/EG** and complies with the provisions of the **EMC-directive 2004/108/EEG**

Complies with the harmonized European Standards:

Harmonized European standard	definition	Harmonized European standard	definition
NEN-EN-ISO 12100:2010	Safety of machinery - Basic concepts, general principles for design - Part 1: Basic terminology, methodology	NPR-ISO/TR 14121-2:2010	Safety of machinery - Risk assessment - Part 2: Practical guidance and examples of methods
NEN-EN-ISO 13857	Safety of machinery - Safety distances to prevent hazard zones being reached by the upper and lower limbs	NEN-EN 13850	Safety of machinery - Emergency stop - Principles for design
NEN-EN-ISO 13849-1	Safety of machinery - Parts of Control Systems with a safety function - Part 1: General principles for design	NEN-EN-IEC 60204-1	Safety of machinery - Electrical equipment of machines - Part 1: General requirements

The Netherlands, Noordwijkerhout,
December 2014

Cees Bouwmeester
Director